

BEST AVAILABLE COPY**PATENT****ATTORNEY DOCKET NO.: N1085-00188
[TSMC2003-0327]****Listing of Claims:**

This listing of claims replaces all previously listings of claims.

1. (Currently amended) A method of etching a nitride-based bottom etch stop layer in a copper damascene structure comprising:

etching the nitride-based bottom etch stop layer using a high density, high radical concentration plasma containing fluorine radicals and oxygen radicals, wherein radical-to-ion ratio of the fluorine radicals and the oxygen radicals in the plasma is greater than about 10:1.

2. (Canceled)

3. (Original) A method according to claim 1, wherein the nitride-based bottom etch stop layer is silicon nitride.

4. (Withdrawn) A method according to claim 1, wherein the nitride-based bottom etch stop layer is oxynitride.

5. (Original) A method according to claim 1, wherein the fluorine is provided by at least one of CF_4 , CHF_3 , SF_6 , NF_3 , C_2F_6 , C_4F_8 , CH_2F_2 , CH_3F , and C_4F_6 .

6. (Original) A method according to claim 1, wherein the high density plasma further comprises N_2 and any one of inert gases.

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7. (Withdrawn) A method according to claim 1, wherein the copper damascene structure is a via step.

8. (Withdrawn) A method according to claim 1, wherein the copper damascene structure is a single damascene structure.

9. (Original) A method according to claim 1, wherein the copper damascene structure is a non-intermediate etch stop layer dual damascene.

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